

(No Model.)

2 Sheets—Sheet 1.

G. & E. ASHWORTH.
CARDING ENGINE.

No. 442,936.

Patented Dec. 16, 1890.

FIG. 1.

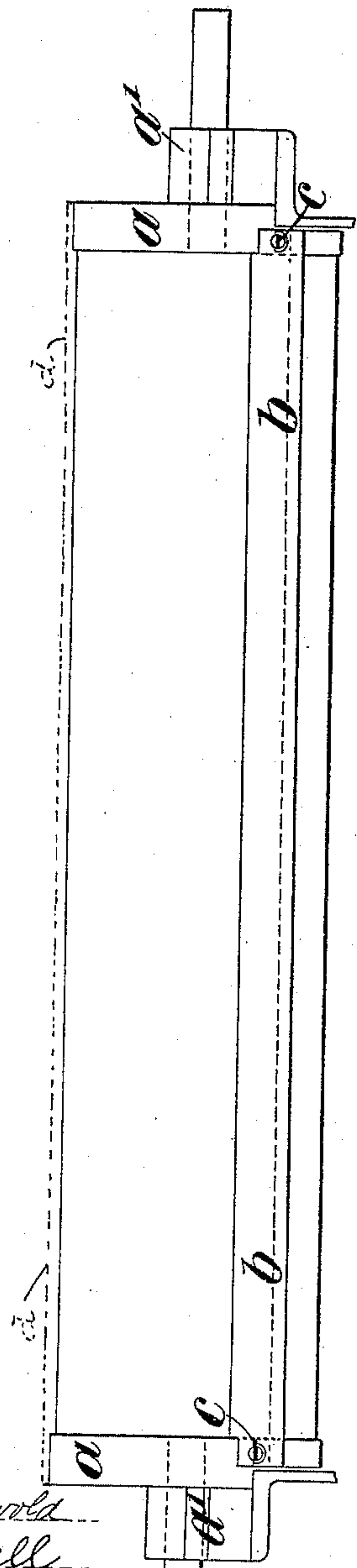


FIG. 2.

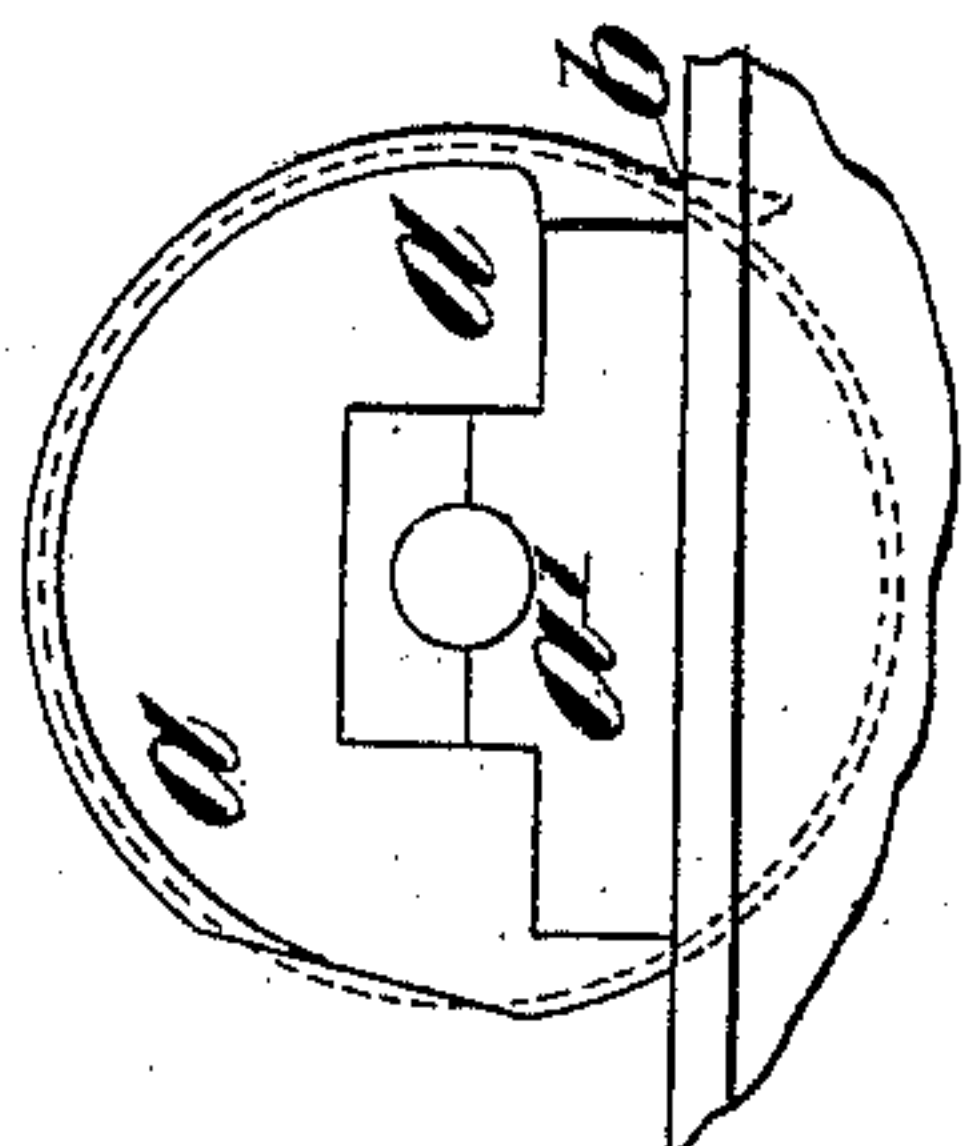


FIG. 3.

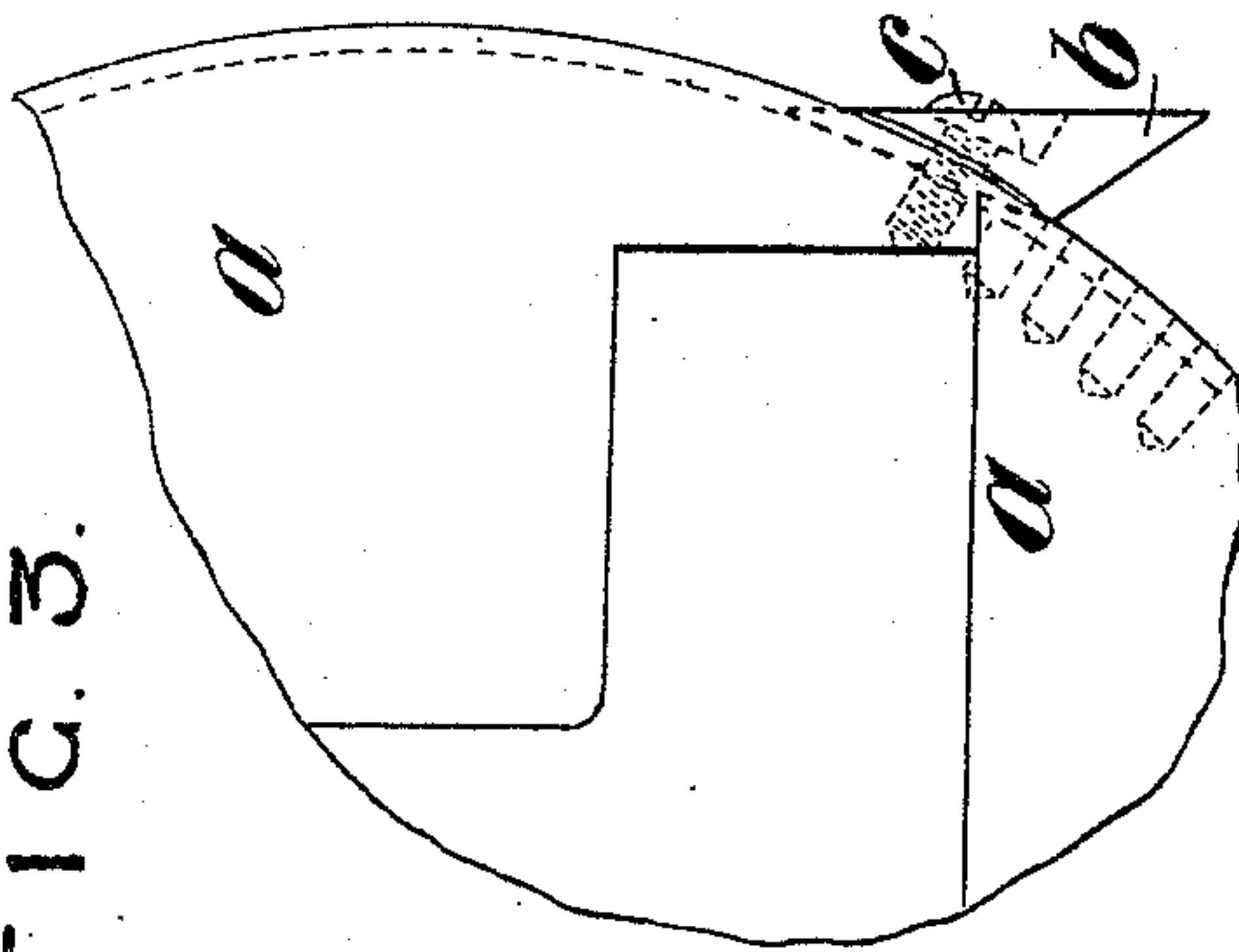


FIG. 4.

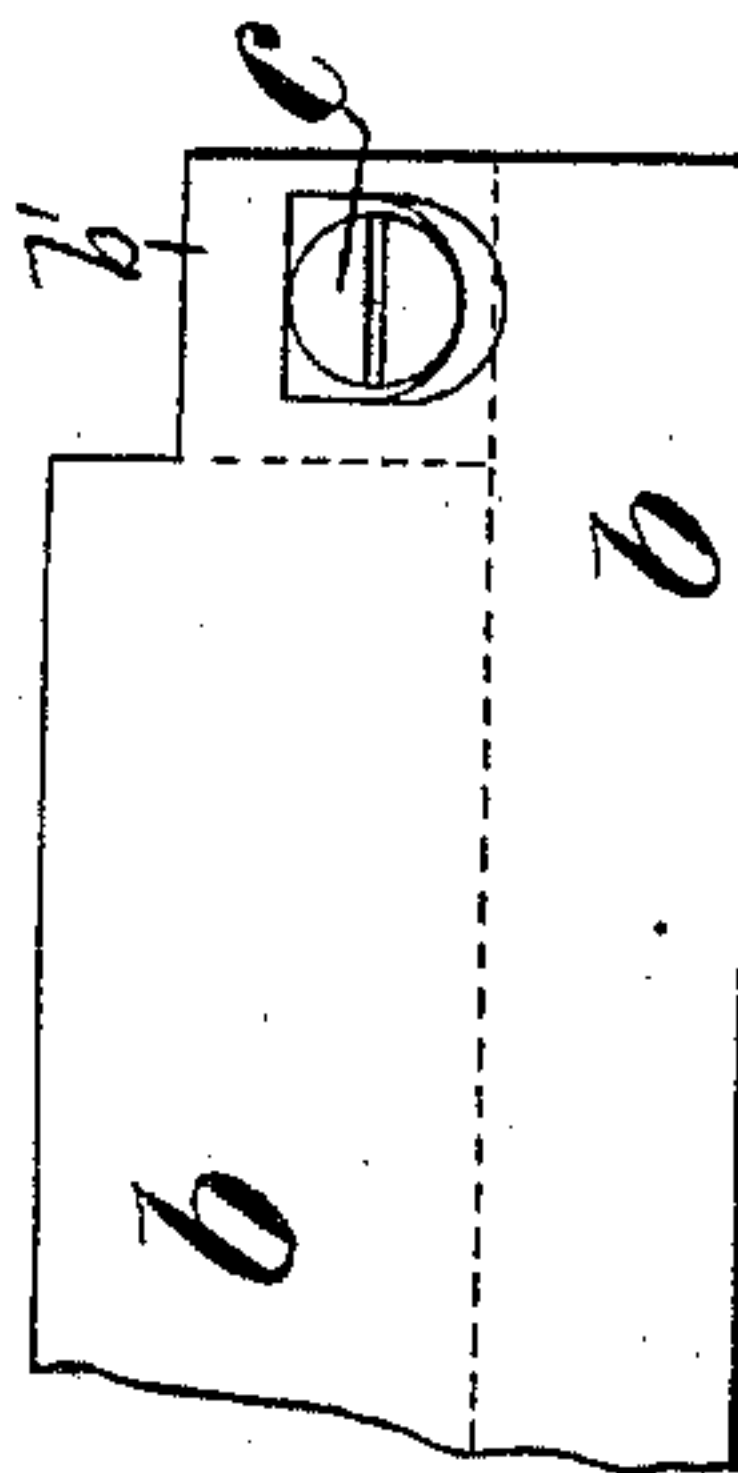
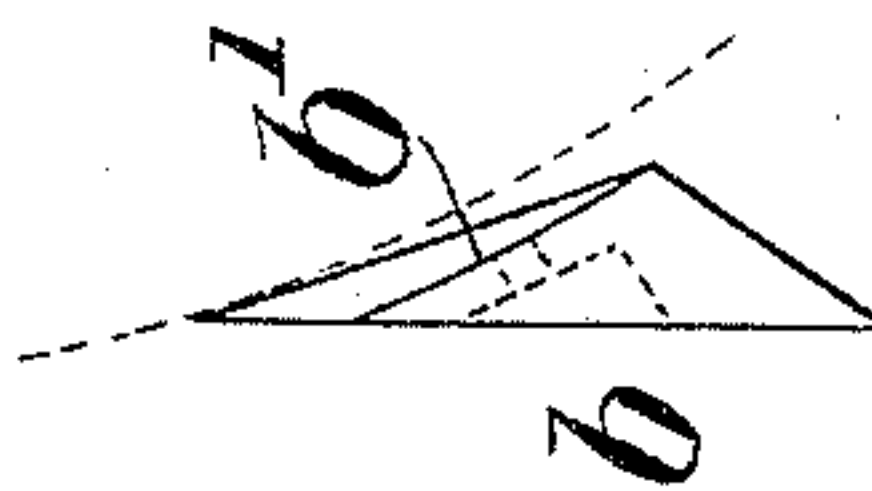


FIG. 5.



Witnesses.
E. J. Griswold
John Revell

INVENTORS
G. Ashworth & E. Ashworth
By their Attorneys
Howson and Howson

(No Model.)

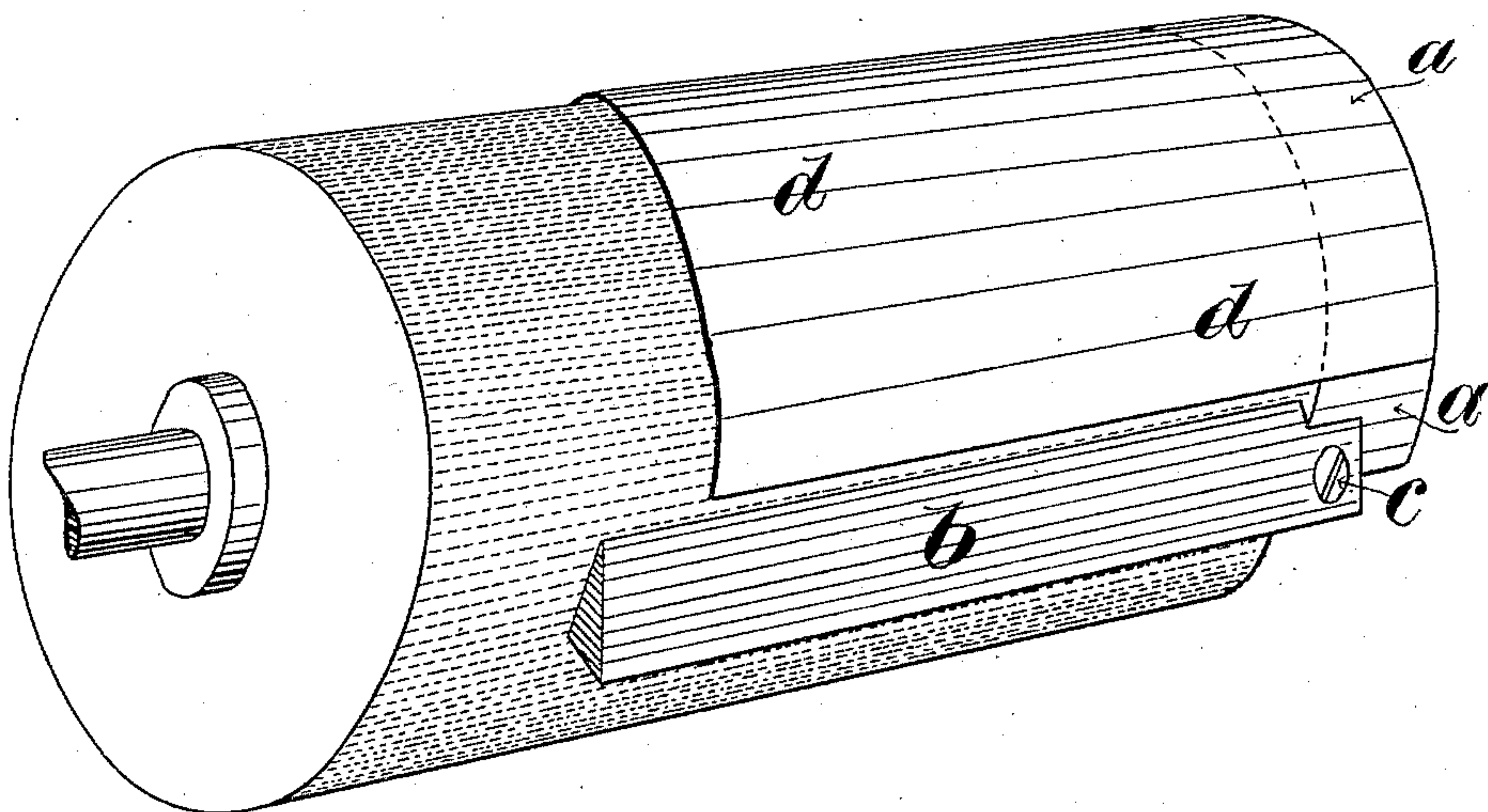
2 Sheets—Sheet 2.

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Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE ASHWORTH AND ELIJAH ASHWORTH, OF MANCHESTER, ENGLAND.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 442,936, dated December 16, 1890.

Application filed August 21, 1888. Serial No. 283,394. (No model.) Patented in England August 22, 1884, No. 11,529.

To all whom it may concern:

Be it known that we, GEORGE ASHWORTH and ELIJAH ASHWORTH, engineers, subjects of the Queen of Great Britain and Ireland, and residing at Manchester, county of Lancaster, England, have invented an Improvement in Carding-Engines, (for which we obtained a patent in Great Britain, No. 11,529, dated August 22, 1884,) of which the following is a specification.

Our invention relates to the means for fixing and adjusting the dirt-knives with relation to the "licker-in" of the carding-engine. In ordinary practice these knives are fixed to brackets which are secured to the machine-framing, and the said knives are adjusted with more or less of accuracy by shifting the brackets upon the framing or the knives upon the brackets. When the licker-in is adjusted nearer to the main cylinder, the knives require readjustment. To remedy the defects of the ordinary means and to obtain a more accurate adjustment, we secure the knives to turned collars or flanges, which are cast or formed upon the plumber-blocks of the licker-in shaft, and serve also to carry a curved steel shield or cover. When the licker-in is adjusted, the knives move with it, so that their adjustment relatively to the licker-in is not affected.

We will describe our invention more fully with reference to the drawings.

Figure 1 is a front view of the licker-in of a carding-engine. Fig. 2 is an end elevation of the same. Fig. 3 shows a part of Fig. 2 drawn to a larger scale. Fig. 4 is a view of one end of the dirt-knife *b* seen in Figs. 1, 2, and 3. Fig. 5 is an end view of the said dirt-knife. Fig. 6 is a perspective view, with parts broken away, of the licker-in, one of the flanges, the cover, and the dirt-knife.

In Fig. 1, *a a* are metal flanges or collars, which are each cast in one piece with the plumber-block *a'*, in which the licker-in shaft revolves. Each of these flanges is turned in a lathe, so as to be exactly concentric with the axis of the bearing in the plumber-block. Upon these two turned flanges a sheet-steel cover *d* rests. This cover is formed by bending a piece of sheet-steel to the proper curvature, so that it will correctly fit upon the turned flanges *a*. The dirt-knife *b* is secured to the said turned peripheries of the flanges *a* by means of screws, as indicated

by *c*. Although only one knife appears in the drawings, any suitable number may be applied in the indicated manner. A number of holes are drilled and tapped in the flanges *a*, comparatively close together, as shown at Fig. 3, so as to provide for the application of the required number of knives, and for the adjustment of any knife in a direction around the axis of the licker-in. The parts of the ends of each knife which bed upon the turned peripheries of the flanges *a* are preferably cut to a curve of a little less radius than the flanges *a*, as indicated at *b'* in Fig. 5, so as to be concave where they bed upon the said flanges. Packings of paper or of other suitable thin material, or packing-pieces, are interposed, when necessary, so as to obtain the required adjustment of the knives radially from the licker-in. When it is advisable to bring the knife or knives nearer to the licker-in, it is only necessary to reduce the thickness of the packings to the required extent by the removal of some of the packing material or replacement of the same with thinner packings.

Having now set forth our invention, we declare that what we claim is—

1. The combination of the licker-in and its shaft with the plumber-blocks for the latter, having the turned flanges, and the dirt-knife secured at opposite ends to the said flanges, substantially as described.

2. The combination of the licker-in and its shaft with the plumber-blocks for the latter, having turned flanges, the dirt-knife, and screws to secure the knife to the flanges, which latter are provided with a number of tapped holes for the attachment and adjustment of the dirt-knife, substantially as described.

3. The combination of the licker-in and its shaft with the plumber-blocks for the latter, having the turned flanges, the dirt-knife secured at the opposite ends to the flanges, and the sheet-metal cover fitting upon the latter, all substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE ASHWORTH.
ELIJAH ASHWORTH.

Witnesses:

DAVID FULTON,
FREDK. DILLON.